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H01M 4/06**(21) Application number: **03214832**(71) Applicant: **TOSHIBA BATTERY CO LTD**(22) Date of filing: **21 . 05 . 91**(72) Inventor: **OGINO AKIHIRO
CHIBA NOBUAKI****(54) NON-AQUEOUS SOLVENT BATTERY****(57) Abstract:**

PURPOSE: To enlarge a surface area, enhance liquid keeping characteristic, reduce inside resistance and increase a voltage capacity by using a carbon fiber as a conductive material.

CONSTITUTION: A carbon fiber having a diameter of ~~35-78~~ ^{700 Angstrom} angstrom; and an aspect ratio of 100 or more obtained by a vapor phase epitaxial method is used as a conductive material for a positive electrode of a non-aqueous solvent battery. In manufacturing the carbon fiber, an $\text{Fe}(\text{NO}_3)_2$ solution is dropped into alumina powder, thus obtaining wet powder, followed by

heating and drying by the use of a high temperature plate. The powder is dispersed as a catalyst inside a reactor. After being heated up to 500°C , the reactor is exposed to an argon atmosphere, and hydrogen is supplied. In this state, a temperature is raised to 1100°C . Benzene saturated hydrogen is supplied into the reactor, followed by cooling. The resultant carbon material is dispersed in ethanol, thus obtaining a carbon fiber having a diameter of 40-200 angstrom. The carbon fiber, an active material and a binding agent are mixed in weight ratios of 5-15:80-94:1-5 respectively, to be molded into a pellet or the like, thereby obtaining a positive electrode mixture.

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35 ~ 700 Angstrom = 3.5 ~ 70 nanometers